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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,968	08/10/2001	Yoshikazu Kuromaru	AI 211	4391

23995 7590 11/29/2002

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EXAMINER

VAN PELT, BRADLEY J

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 11/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,968

Applicant(s)

KUROUMARU ET AL.

Examiner

Bradley J Van Pelt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on pg. 9 of the specification, line 4 "penetrates" should be changed to --stops--; in claim 6, line 1, "steeling" should be changed to --steering--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hancock (USPN 5,377,555).

Re: claim 1, Hancock discloses a tilt steering apparatus comprising a tilt adjustable steering column (3), comprising: a fixed bracket fixed to a body of a vehicle; a tilt bracket (16) fixed to the steering column; side plates (6) provided in the tilt bracket and sliding along the side plates of the fixed bracket at a time of tilt adjustment; a supporting shaft (17) passing through respective insertion holes of the side plates the fixed bracket and the tilt bracket; a lock lever (14) rotatable in the locking direction and the locking releasing direction around an axis of the supporting shaft and rotated in the locking direction to lock the steering column to an adjusted tilt position; and a cam surface (C) and a cam follower (11) which are relatively rotated while being brought into sliding contact with each other as the lock lever is rotated, the cam surface including a plurality of slopes corresponding to a rotation stroke position of the lock lever, the

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cam surface pressing the cam follower as the lock lever is rotated in the locking direction so that the side plates of both the brackets are pressed against each other, resulting in the steering column being locked at the adjusted position.

Re: claim 2, Hancock discloses the cam follower is moved in a first direction relative to the cam surface when the lock lever is stroked in the locking direction, the plurality of slopes of the cam surface include first and second slopes which are upward slopes in the first direction, the second slope being gentler than the first slope, and the cam follower slides from the first slope of the cam surface to the second slope thereof when the lock lever is stroked in the locking direction.

Note: since the surface of the Hancock apparatus is curved, there are an infinite number of slopes. In the direction of unlocking to locking, the cam surface passes through a maximum point (10d), meaning that the slope in this direction must become gentler as it approaches zero.

Re: claim 3, Hancock discloses the plurality of slopes of the cam surface include a third slope (see note above) which is an upward slope in the first direction, the third slope being gentler than the second slope, and the third slope corresponds to a rear of a stroke in a locking direction of the lock lever, and the cam follower successively slides toward the first, second and third slopes of the cam surface in this order when the lock lever is stroked in the locking direction.

Re: claim 4, Hancock discloses the plurality of slopes of the cam surface include an inverse slope (10c) which is a downward slope in the first direction, the inverse corresponds to a rear of a stroke in the locking direction of the lock lever, and the cam follower slides toward the

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first and second slopes and the inverse slope of the cam surface in this order when the lock lever is stroked in the locking direction.

Re: claim 5, Hancock discloses all of the instantly claimed invention as stated in the rejection of claim 1 and a means for increasing an operating torque of the lock lever at a front of a stroke in the locking releasing direction of the lock lever, the cam surface and the cam follower constituting means for increasing the operating torque of the lock lever.

Re: claim 6, see above rejections of claims 2 and 4.

Re: claim 7, Hancock discloses the cam follower includes a cam follower surface which is substantially brought into contact with the cam surface at an edge (10b) in correspondence with at least the front of the stroke in the locking direction of the lock lever.

Re: claim 8, Hancock discloses that an angle of inclination of the cam follower surface differs from an angle of inclination of an area, corresponding to at least the front of the stroke in the locking releasing direction of the lock lever, of the cam surface.

Re: claim 9, Hancock discloses the cam surface includes an area (10c) corresponding to the front of the stroke in the locking releasing direction of the lock lever, a recess concaved by providing a step in the area.

Re: claim 10, Hancock discloses the cam follower includes a cam follower surface, which is brought into contact with the cam surface, and the cam follower surface includes a projection which is engaged with a rear of a stroke in the locking direction of the lock lever.

Re: claim 11, Hancock discloses an area, corresponding to the front of the stroke in the locking releasing direction of the lock lever, of the cam surface includes a portion (10d) having no slope.

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Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following includes a sloped cam surface: Coughren (USPN 3,238,797).


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley J Van Pelt whose telephone number is (703)305-8176.

The examiner can normally be reached on M-Th 7:00-4:30, 2nd F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on (703)308-3668. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3597.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-2168.

BJVP 
November 21, 2002


DAVID A. BUCCI
SUPERVISORY PATENT EXAMINER
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